CLAIMS

1. Paint composition for formation of corrosion and moisture-resistant paint layer on a surface of a metal sheet, which comprises base resin, a corrosion inhibitor prepared from porous silica particles to which Ca ion is bonded by ion-exchange, a polyphosphate and optionally other pigment(s).

2. The paint composition defined in Claim 1, wherein the base resin is a polyester, macromolecular polyester, epoxy, epoxy-denatured polyester, epoxy-denatured macromolecular polyester or polyether sulfonate.

3. The paint composition defined in Claim 1, wherein the corrosion inhibitor is porous silica particles to which Ca ion is bonded at a ratio of 3-40%.

4. The paint composition defined in Claim 1, which contains the corrosion inhibitor at a ratio of 2-50 parts by weight based on 100 parts by weight of resinous components.

5. The paint composition defined in Claim 1, wherein the polyphosphate is one or more of aluminum pyrophosphate, aluminum metaphosphate or aluminum dihydrogentripolyphosphate.

6. The paint composition defined in Claim 1, which contains the corrosion inhibitor and the polyphosphate at an A/B weight ratio of 60/40 to 5/95 and at an A+B ratio of 5-150 parts by weight based on 100 parts by weight of resinous components, wherein A and B represents the corrosion inhinbitor and the polyphosphate, respectively.

7. The paint composition defined in Claim 1, wherein the other pigment(s) are one or more of titanium oxide, calcium carbonate and silica.

8. A painted metal sheet having a paint layer, which comprises base resin, a corrosion inhibitor prepared from porous silica particles to which Ca ion is bonded by ion-exchange, a polyphosphate and optionally other pigment(s), formed on a surface of a base metal sheet.

9. The painted metal sheet defined in Claim 8, wherein the base metal sheet is a steel sheet coated with a Zn, Zn-Al or Al plating layer.

10. The painted metal sheet defined in Claim 8, wherein the base metal sheet has a surface chemically treated with a chemical agent containing one or more of chromic, phosphoric, silicic, zirconic, manganic, titanic acid hydrofluoric acids.

11. The painted metal sheet defined in Claim 8, wherein the base metal sheet has a surface chemically treated with a chemical agent containing at least one of fluoroacids.

12. The painted metal sheet defined in Claim 11, wherein the fluoroacids are one or more of H_2TiF_6, H_2ZrF_6, H_2HfF_6, H_2SiF_6, H_2SnF_6 and HBF_4.

13. The painted metal sheet defined in Claim 11, wherein fluorides are deposited on the surface of the steel sheet at a ratio of 0.5-500mg/m^2 calculated as deposited fluorine and/or at a ratio of 0.1-500mg/m^2 cancluated as deposited metals in total.

14. The painted metal sheet defined in Claim 8, wherein the paint layer is an undercoat on which a topcoat is formed.

15. The painted metal sheet defined in Claim 8, wherein the base resin is polyester, macromolecular polyester, epoxy, epoxy-denatured polyester, epoxy-denatured macromolecular polyester or polyether sulfonate.

16. The painted metal sheet defined in Claim 8, wherein the corrosion inhibitor is porous silica particles, to which Ca ion is bonded at a ratio of 3-40%.

17. The painted metal sheet defined in Claim 8, which contains the corrosion inhibitor at a ratio of 2-50 parts by weight based on 100 parts by weight of resinous components.

18. The painted metal sheet defined in Claim 8, wherein the polyphosphate is one or more of aluminum pyrophosphate, aluminum metaphosphate or aluminum dihydrogentripolyphosphate.

19. The painted metal sheet defined in Claim 8, which contains the

corrosion inhibitor and the polyphosphate at an A/B weight ratio of 60/40 to 5/95 and at an A+B ratio of 5-150 parts by weight based on 100 parts by weight of resinous components, wherein A and B represents the corrosion inhinbitor and the polyphosphate, respectively.

20. The painted metal sheet defined in Claim 8, wherein the other pigment(s) are one or more of titanium oxide, calcium carbonate and silica.